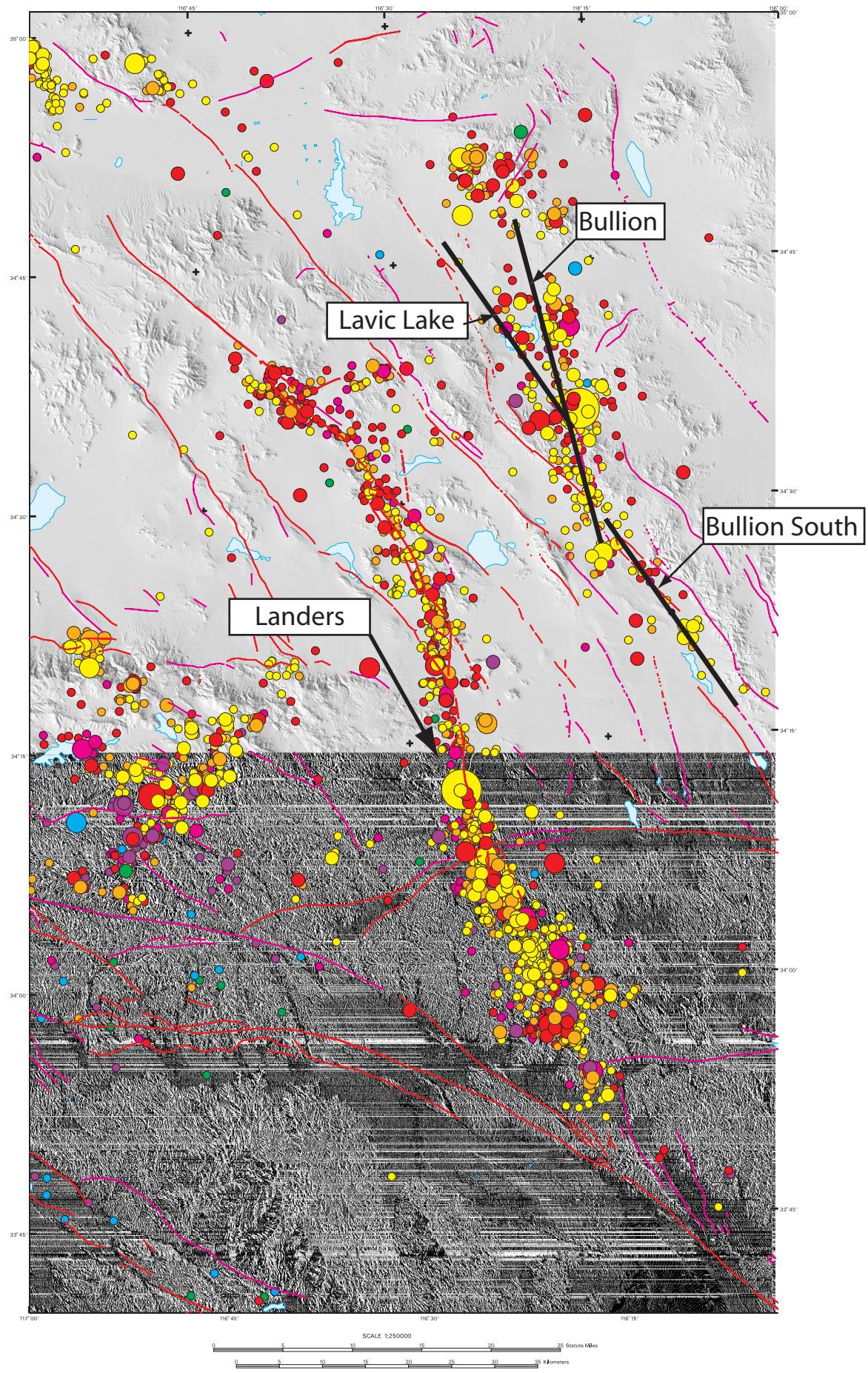


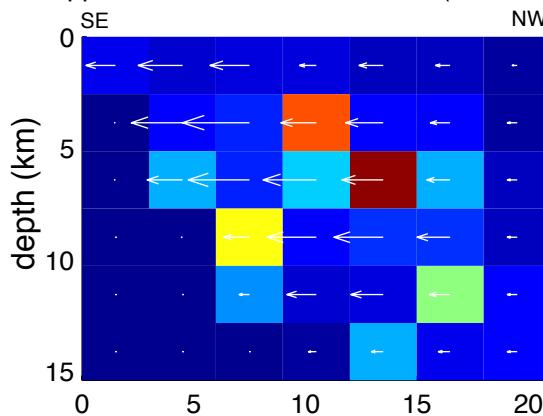
Distributions of energy radiation and apparent stress over earthquake fault zones suggest constant Es/Mo

Art McGarr
U. S. Geological Survey

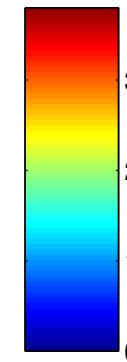
- 1) hector_map: show fault map for Hector Mine earthquake. The three prominent segments from NW to SE
 - are represented on the two slip models used here from top to bottom.
- 2) ji_ta: Slip model of Ji, Wald and Helmberger showing slip and apparent stress.
- 3) kav_ta: Slip model of Kaverina, Dreger and Price showing slip and apparent stress.
- 4) ji_e: Slip model of Ji et al. showing distribution of seismic energy radiation.
- 5) kav_e: Slip model of Kaverina et al. showing distribution of seismic energy radiation.
- 6) summary_e: Different types of energy estimates for various well-studied earthquakes.
 - Blue symbols represent estimates from slip models.
- 7) maxslip: Maximum slip as a function of seismic moment. Point at lower left is an adjusted estimate
 - from a stick-slip rupture in the lab (last figure).
- 8) sliprate: Slip-averaged slip rate on patch of fault showing maximum slip for various earthquakes.
- 9) mom_ta: Apparent stress vs. seismic moment for various earthquakes and adjusted lab event (solid diamond).
- 10) Lockner: Loading and frictional stresses as functions of fault slip for a stick-slip event on the
 - large biaxial friction rig.



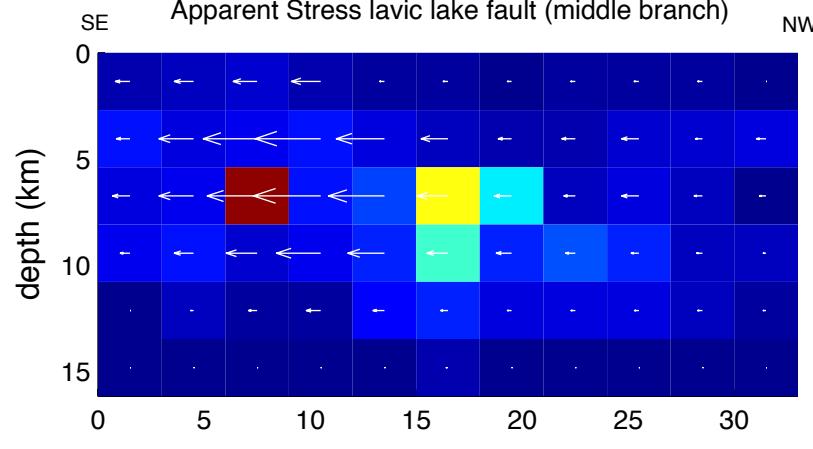
Apparent Stress Lavic Lake fault (West branch)



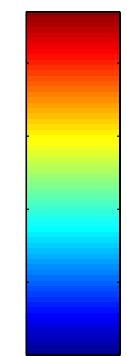
MPa



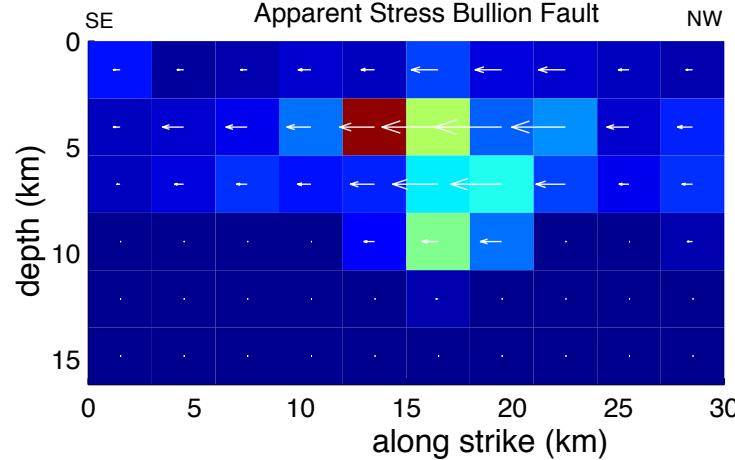
Apparent Stress lavic lake fault (middle branch)



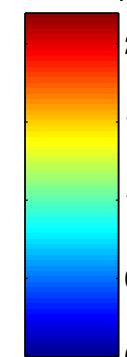
MPa



Apparent Stress Bullion Fault

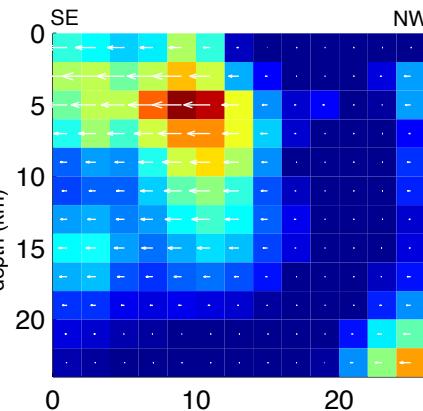


MPa



↔
0.56m

Apparent Stress Lavic Lake segment



$\times 10^{-1}$ MPa

10

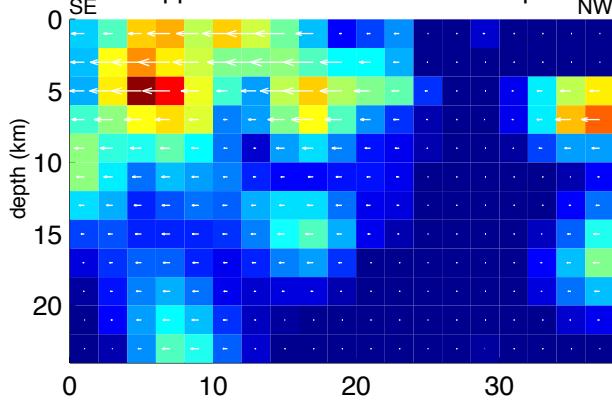
8

6

4

2

Apparent Stress Bullion Fault slip



$\times 10^{-1}$ MPa

10

8

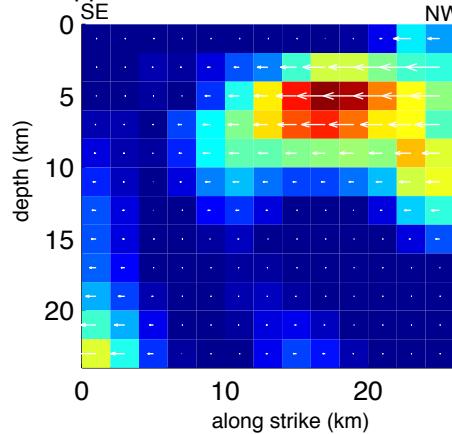
6

4

2

0.48m

Apparent Stress South of Bullion Fault



$\times 10^{-1}$ MPa

10

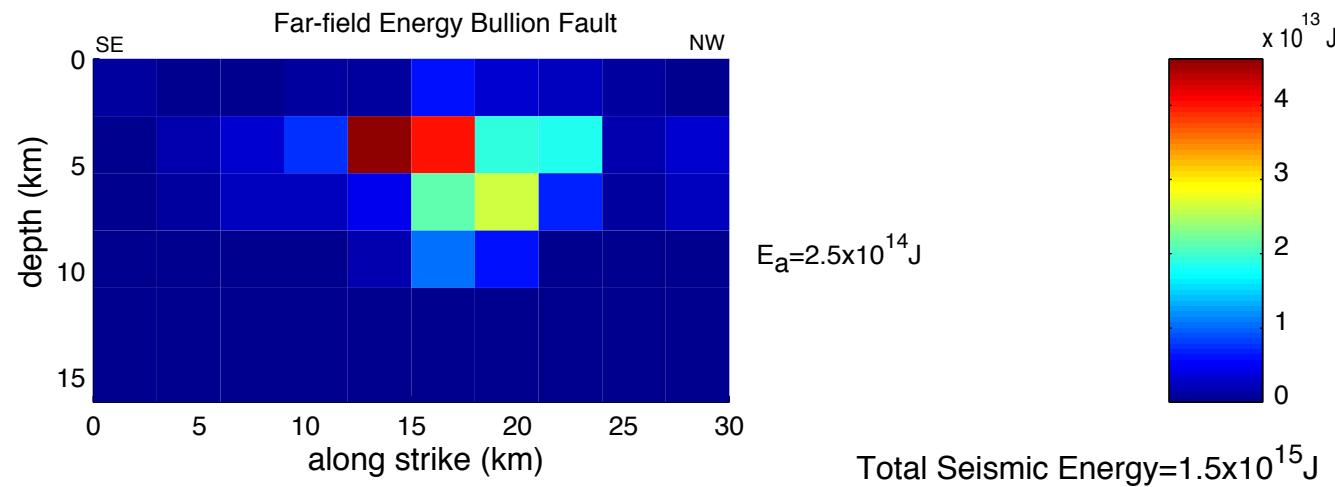
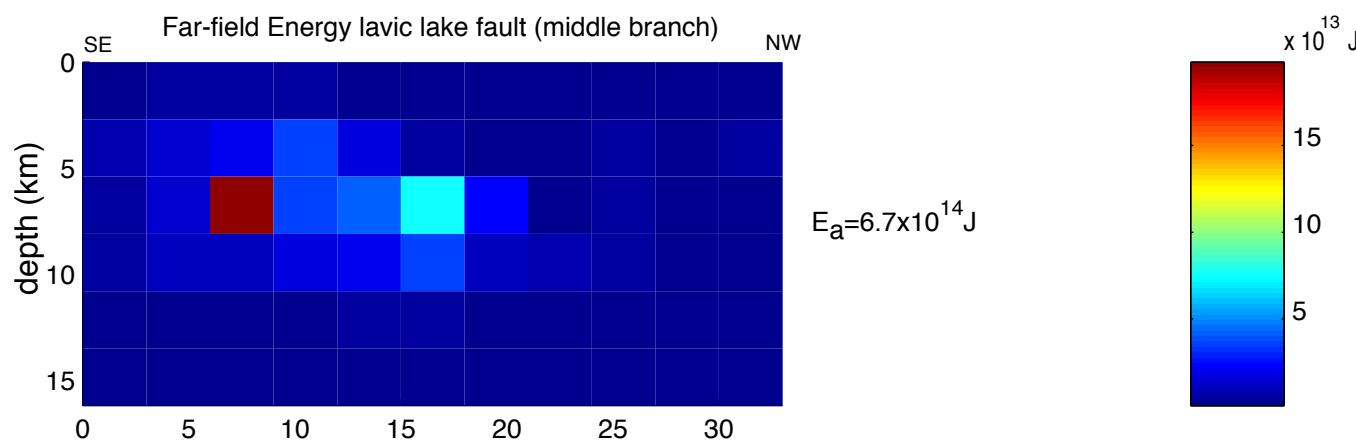
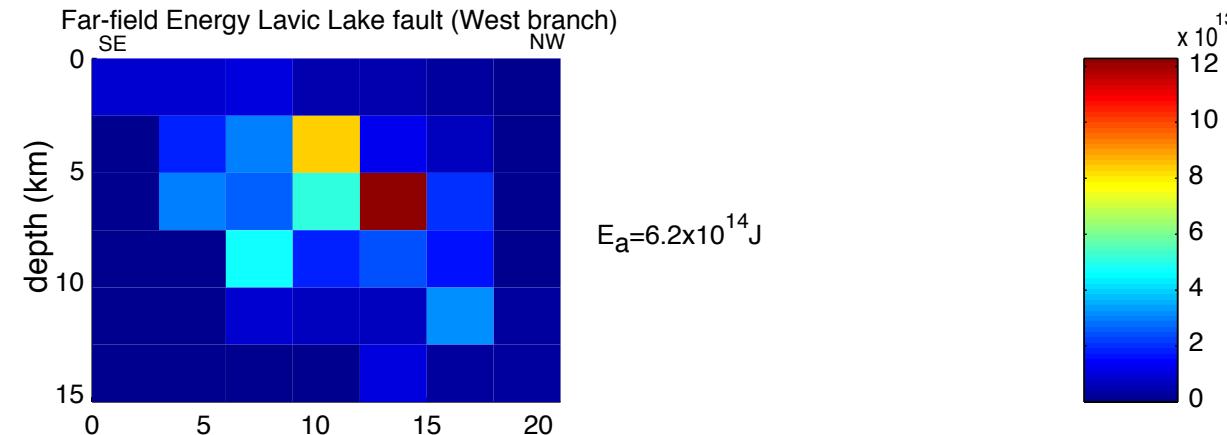
8

6

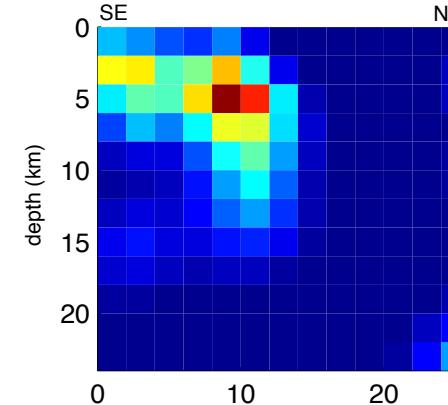
4

2

along strike (km)



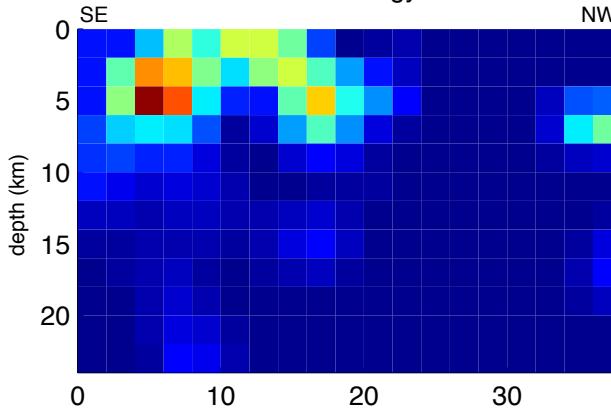
Far-Field Seismic Energy Lavic Lake segment



$$E_a = 4.1 \times 10^{14} \text{ J}$$

$\times 10^{13} \text{ J}$

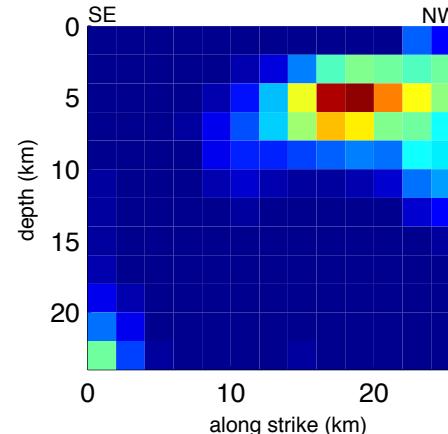
Far-Field Seismic Energy Bullion Fault



$$E_a = 3.6 \times 10^{14} \text{ J}$$

$\times 10^{12} \text{ J}$

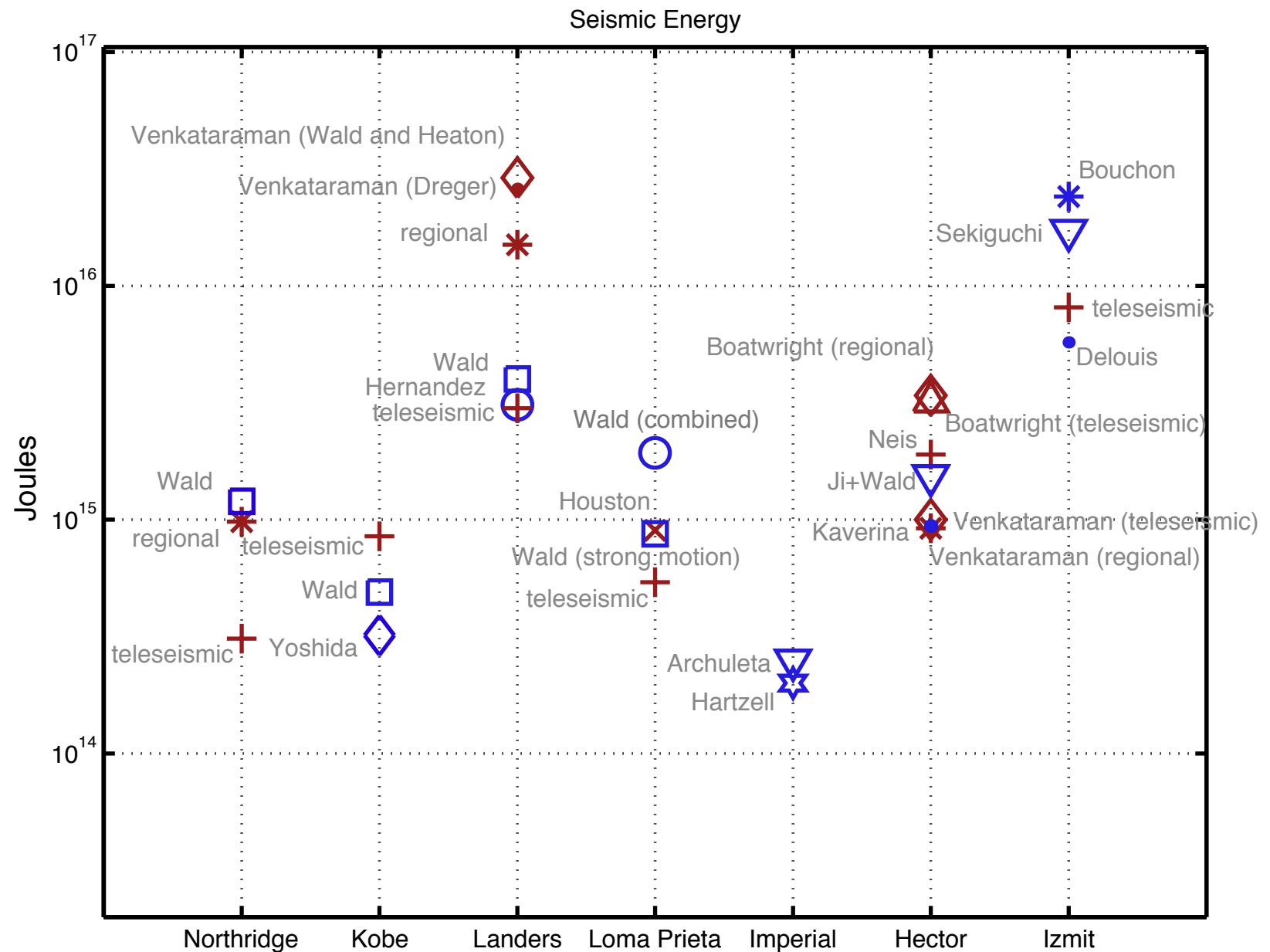
Far-Field Seismic Energy South of Bullion Fault



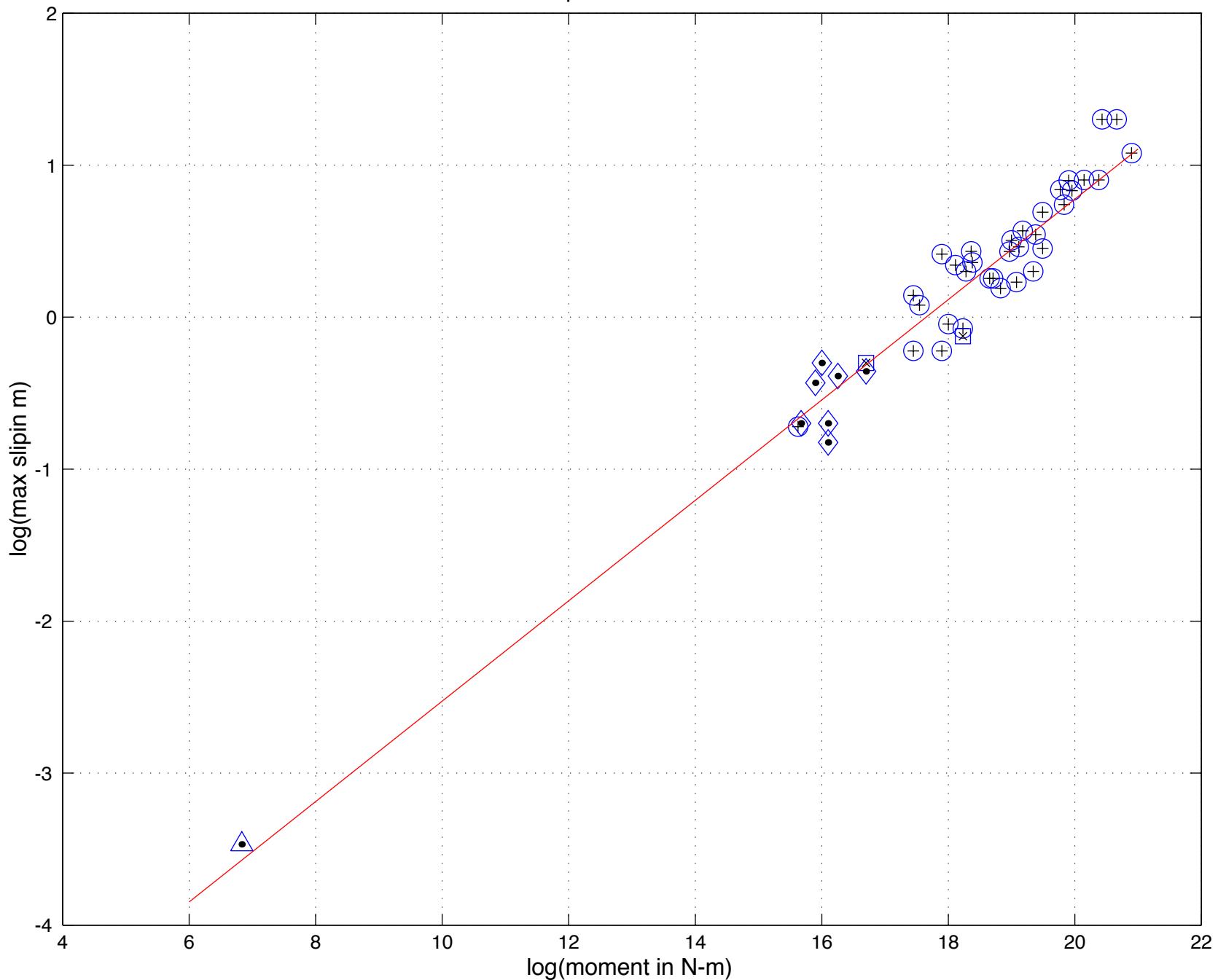
$$E_a = 1.7 \times 10^{14} \text{ J}$$

$\times 10^{12} \text{ J}$

Total Seismic energy = $9.4 \times 10^{14} \text{ J}$



Maximum Slip versus Seismic Moment



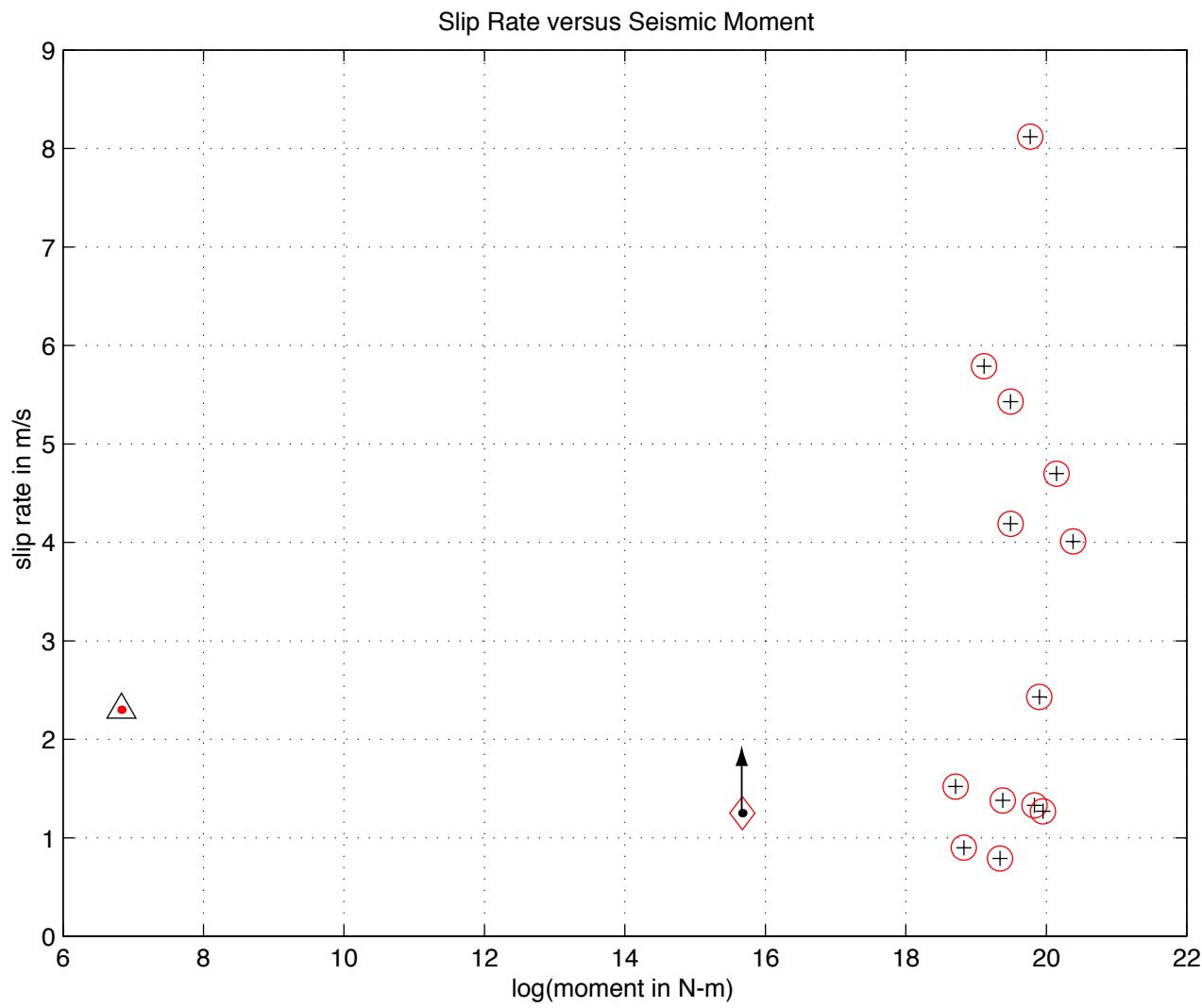


Figure 3

